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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,167	01/02/2001	J. Richard Aylward	02103-369001 / AABOSS12	9696
26162	7590	11/15/2006	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			MEI, XU	
			ART UNIT	PAPER NUMBER
			2615	

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/753,167

Applicant(s)

AYLWARD, J. RICHARD

Examiner

Xu Mei

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-8,10-13 and 22 is/are pending in the application.
- 4a) Of the above claim(s) 12,13 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 5-8, 10-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This communication is responsive to the applicant's amendment dated 08/14/2006.
2. Claims 1-2, 5-8, 10-13 and 22 are currently pending. Claims 12-13 and 22 have been withdrawn from consideration by the amendment of 08/14/2006.
3. Applicant's arguments, see pages 6-7, filed 08/14/2006, with respect to 35 U.S.C. 112, second paragraph rejection on claim 1 have been fully considered and are persuasive. The 35 U.S.C. 112, second paragraph rejection of claim 1 has been withdrawn.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 5-6, 8 and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Bose et al. ("Bose") (US Patent 4,628,528).

Regarding Claim 1, Bose discloses an acoustic waveguide having an open end and an interior (Fig. 8, opening 42); a first acoustic driver connected to said acoustic waveguide having a first radiating surface and a second radiating surface (one of the

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drivers 41 radiating sound waves into air and waveguide), constructed and arranged so that said first radiating surface radiates sound waves into free air and said second radiating surface radiates sound waves into said acoustic waveguide so that sound waves are radiated at said open end (42) into free air that would ordinarily oppose the radiation from said first surface at a dip frequency (Fig 7, dip frequency); and a source of opposing sound waves in said acoustic waveguide for opposing a predetermined spectral component corresponding to said dip frequency of said sound waves radiated into said acoustic waveguide to oppose the acoustic radiation of said predetermined spectral component from said acoustic waveguide (another one of drivers 41 that is generating a source of opposite sound waves) so that the combined radiation into free air from said first radiating surface and said open end is free from appreciable reduction in radiation at said dip frequency (the null at the dip frequency being reduced would have produced appreciable reduction in sound wave radiation).

Regarding Claim 2, Bose further discloses an acoustic port coupling said interior with free air (42).

Regarding Claim 5, Bose further discloses said source or opposing sound waves comprises a second acoustic driver arranged and constructed to radiate sound waves into said acoustic waveguide (drivers 41).

Regarding Claim 6, Bose further discloses an acoustic port, coupling said interior with free air (42).

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Regarding Claim 8, Bose further discloses predetermined spectral component comprises a dip frequency at which said waveguide system produces an acoustic null, absent said source of opposing sound waves (Fig. 7).

Regarding Claim 10, Bose further discloses said source or opposing sound waves comprises a second acoustic driver arranged and constructed to radiate sound waves into said acoustic waveguide (drivers 41).

Regarding Claim 11, Bose discloses an acoustic waveguide (Fig. 8) having an open end (42) and a closed end (drivers 41) and further having an effective length (see col. 3, line 64-col. 4, line 35); an acoustic driver having a first radiating surface constructed and arranged to radiate sound waves into free air and a second radiating surface for radiating sound waves into said waveguide so that sound waves are radiated at said open end into free air that would ordinarily oppose the radiation from said first surface at a dip frequency (one of driver 41 in Fig. 8, and see also Fig. 7), a source of opposing sound waves (another one of drivers 41 that is generating a source of opposite sound waves) positioned in said acoustic waveguide so that there is an acoustic null at said open end at said dip frequency so that the combined radiation into free air from said first radiating surface and said open end is free from appreciable reduction in radiation at said dip frequency (the null at the dip frequency being reduced would have produced appreciable reduction in sound wave radiation).

***Claim Rejections - 35 USC § 103***

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bose as applied to claim 6 above in view of Edgar (US Patent 5,588,063).

Bose discloses a system as stated apropos of claim 6 above including a closed end (left end of waveguide). Bose does not disclose an acoustic port positioned between said first acoustic drive and said closed end of said acoustic waveguide.

Edgar discloses a waveguide system including acoustic ports (Fig. 4, ports 52) in order to improve the directionality of the speaker system (Col. 5, lines 60-66). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include acoustic ports to improve the directionality of the speaker system as taught by Edgar.

### ***Conclusion***

8. Applicant's arguments with respect to claims 1-2, 5-8, 10-13 and 21 have been considered but are moot in view of the new ground(s) of rejection.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is 571-272-7523. The examiner can normally be reached on maxi flex.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Xu Mei  
Primary Examiner  
Art Unit 2615  
11/06/2006